

CRITICAL
REFLECTIONS
UPON THE
EMMENOLOGY

OF

Dr. FREIND.

BY

Dr. LE TELLIER, a French Physician.

Translated from the FRENCH.

L O N D O N

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CRITICAL

REFLECTIONS

EVERYBODY

DR. J. R. L. D.



PREFACE.

THE best Preface, in
T my Mind, that can be
 made to this Book is, a
 Quotation out of itself,
 p. 59. where the Author, as in a Sort
 of Corollary, drawn from his own
 Reflections, says ;

“ From the Reflections that have
 “ been hitherto made, it may be ga-
 “ ther’d, that ’tis by no Means, an
 “ indifferent Matter in Practice, to
 “ adopt

“ adopt indifferently, the System of
“ the Rupture of the Vessels, or that
“ of the Intrusion of the Blood into
“ the lymphatick Canals : It is of
“ the highest Consequence, to chuse
“ either the one or the other, to list
“ on one Side or the other, and to
“ appear more than ordinarily engaged
“ or concern'd therein. If the Dispute
“ here was only about some insipid,
“ barren Point of Speculation, amu-
“ sing perhaps to the Curious, but
“ altogether uselefs, and without In-
“ fluence on Practice, those who
“ regard Things only as they are use-
“ ful, might perhaps slumber over
“ it :

P R E F A C E. vii

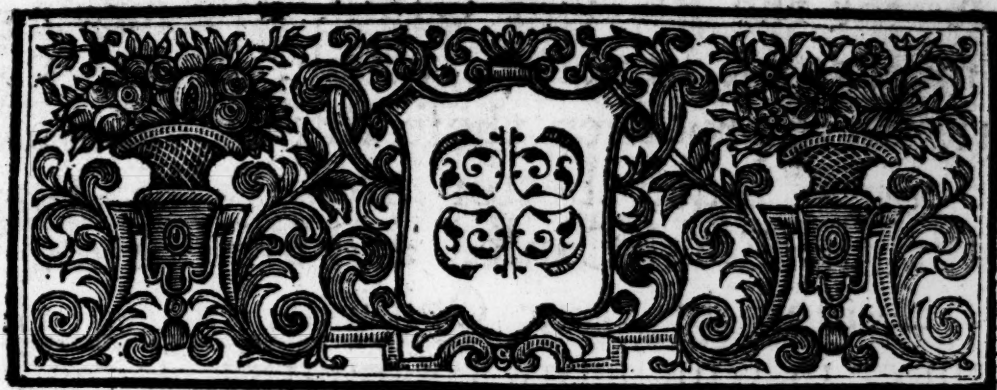
“ it : But as our Business is here
“ about a capital Point, which affects
“ and concerns Practice to the highest
“ Degree ; since in the two Hypo-
“ theses the Manner of Cure is quite
“ different ; this ought to awake
“ the Attention of all Practitioners,
“ inspire them with an extraordinary
“ Relish for the present Subject, and
“ rouse them totally out of their
“ Indifference.

And this should, indeed, rouse
out of their Indifference, not only all
Gentlemen of the Faculty, but even,
methinks, should tempt all Gentle-
men, who are (as all Gentlemen
should

viii P R E F A C E.

should be) Men of Learning, to study this Point, on purpose to concern themselves in this Controversy, as it regards the Well-being of the Fair Sex, the lovely Fountain whence, under Heaven, we all have our Being; Women! to promote whose Health and Happiness, the Man that is not ambitious, is a Monster! the Object of all Mankind's just Detestation!

CRITI



CRITICAL REFLECTIONS.



WOMEN are subject to such regular Evacuations, that 'tis very hard to account for, and assign the Cause thereof. Some have been of Opinion, that Nature, by this Flux, propos'd to purge the Blood of the Sex from the Impurities it contracts, thereby to render them more fruitful. Others, by observing the Qualities of the Blood which Women in Health lose in their Courses, have been persuaded, that 'tis so far from being an Excrement, or Mass of Filth, that, on the contrary, it is a most pure Blood, and of Consequence, very fit and proper to nourish the *Fœtus*. So much for the Final Cause, or End, for which these Flowings seem ordain'd.

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As for the Efficient Cause, the moving, or mechanick Principle, which, in the Female Body produces these Effects, Men do not agree much better about this, than about the Final Cause, and are not much less divided in their Opinions, as to the Manner in which this Evacuation is made, than they are concerning the End, the Motives and Design, which Nature may have in procuring it.

Some Authors, much devoted to Astro-culture, and accustomed to trample under Foot such immediate Causes as they have just at Hand, Objects that are too plain, familiar, palpable, and natural for them to look upon but with Contempt, as Things common, ordinary, trivial; these Men erect the Moon for the efficient Cause, and make her absolute Mistress of the Courses in Question. Others, somewhat more indulgent, and better disposed towards sublunary Causes, have taken Care to make Cavities in the Womb, where they lodge in Ambuscade a certain Ferment, or Leaven, which they have order'd to fall regularly thence every Month, to attack the Blood in its Passage, put the Humours all in Combustion, disturb the Harmony of the Motions, the Exactness of the Functions, and, in fine, to play the little Devil, that, full of Malice, bent upon Mutiny, and breathing nought but wild Sedition, is never at Rest, nor lays down his Arms, till he has rais'd in the Blood

Blood a tumultuous Agitation, a disorderly Effervescence, a more than ordinary Fermentation, and laid under Fire and Gore all the Region of the *Matrix*, which he makes a Field of Battle, that is, for some Days, to be quite overflown with Blood, and as the Object of his Rage, to appear altogether dismal, and in Disorder. They who judge in the most simple, and most natural Way, and, of course, the nearest to Truth, are those who, after the famous *Galen*, acknowledge for Cause and Mover of this Flowing, the *Plethora*, or Abundance of Blood, among whom, we must confess, that Dr. *Freind*, an *English* Physician, has most distinguish'd himself, in a Treatise he has publish'd upon this Subject; which, tho' it be not exempt from Mistakes (as we shall observe in the Sequel of this) is, however, in the main, a valuable Piece, both for the singular Clearness that shines every where throughout the Performance (which makes its principal Merit) and for the great Number of very excellent Reasonings, and essential Observations, that we see there display'd in the fairest Light. If one will but vouchsafe to stoop a little, to seek for Causes in the sublunary Empire, and not to be over-smitten with the Charms of the Moon, and dazzled with her mighty Power; in fine, if we'll be impartial Judges, we shall easily side with *Galen*, and without Hesitation, give to the System of the *Plethora*

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(which has since been so illustrated by Dr. *Freind*) the Justice due to it, and the Preference it deserves.

Women, in their Courses, do but discharge their Superfluity ; and, to be convinc'd of this, it is enough to observe, that after they have had these Flowings long enough, for Instance, the Space of Five Years, they are no ways disorder'd thereby, but, on the contrary, they continue always alike, hold the very same State, enjoy the same Vigour, and, if you weigh 'em, you'll find 'em no lighter ; and yet, in this Time, they have lost a Hundred Pound of purest Blood ; a Loss ! that should not only weaken them, but consume almost their whole Substance, and reduce them to nothing, were it any thing else but Superfluity. Now, if Women have this Redundancy of Blood, this is what we call the *Plethora*, and the Matter we are seeking. There is therefore this *Plethora*, or Redundancy of Blood in Women ; that is prov'd : But how, and by what Means is this *Plethora* contracted in the Persons of the Sex ? This is what we now must unfold in two or three Words ; *Women transpire less than Men* ; which is prov'd by four Reflections : 1st. Their Bodies are more weak and tender ; the Parts thereof less robust ; the Texture of the Fibres more fine and soft, and less proper for oscillatory Motions ; and, in fine, less vigorous ; witness their gentle
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and languishing Pulse; which shews us plain, that the peaceable Blood, moving easy in its Course, and slowly rowling through the drowfy Vessels, runs not rapidly to the Glands, neither towards the Skin, nor elsewhere; so that the Secretion of the Humours cannot very much be promoted: Add to this, that the Juices, separated in the Strainers, are not in Haste to issue; because the secreting Pipes have not a systaltick Virtue strong enough to squeeze 'em thro', and drive 'em forth with Precipitation. *2dly*. The Vessels in Women are of a straiter Orifice. Now, as the Secretion of Humours is more or less abundant, according as the Strainers are bigger or smaller, and the Blood more or less animated, it follows of Course, that, the Motion of the Blood being less strong at the same time that the Pipes or Organs of Secretion are more strait in the Woman, the Secretion of the Humours must be perform'd more slowly. *3dly*. Women are of a moist Temperament, as plainly appears by the Suppleness and Softness of their Skin; now, if the Fibres are so soak'd in Humidity, 'tis because they have not Vigour enough to rid themselves of it; for that Body must be dry which expels with Force the Juices that come into it, and discharges a great Part of its Moisture by Transpiration, which is the more abundant in Proportion as the Oscillation of the Vessels is the more vigorous. *4thly*. The Fair

Fair Sex is not so active, has not so much Exercise; they lead an idle, indolent, sedentary Life, which does not much excite Transpiration: 'Tis true, we see some Women robust, and engag'd in hard Labour. These, because they are as strong as Men and have a manly Complexion and Character, are call'd Virago's; and such are exempted from the usual Courses of Women. We have also seen Women-Singers and Dancers exempted from these. But here may be objected what Dr. *Andry* advances in his excellent Thesis upon Exercise, that Womens frequent Tattle may supply the Want of other Bodily Labour; and, perhaps, hence it comes, that Women, chattering much more than Men, have less Occasion for other Exercise. We must own that Transpiration is assisted by the Motion of the Voice in Conversation; yet these Motions are not so considerable, as not to leave sufficient Matter for Womens Courses. Thus is the *Plethora* bred in the Sex; whence Nature is obliged to prepare a Discharge for the superfluous Blood, whose Sally, for several Reasons, is thro' the Womb; for this is the Part where the Blood more plentifully issues, because of the great Number of Blood-Vessels, which, being wound and interwoven together, spread all over and through the Substance, in a Thousand Warps and Turnings, after a serpentine Manner; and that which the more conveys

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The Blood this Way, is the Trunk of the
 descending *Aorta*, which is remarkably
 larger in Women than in Men, to the End
 that, the Blood flowing more abundantly
 downwards, the *Fœtus* may thereby be the
 better nourished, and the easier thrust out
 by the Muscles in Time of Child-Birth.
 Now, as much Propension as the Blood has
 to descend towards the *Matrix*, so much
 has it the greater Difficulty to return from
 thence; for thither it tends, through the
 Arteries, which jirk it pretty fast along,
 and the more readily, as the Blood of itself,
 by its own Weight, concurs to the Motion:
 But it returns through the Veins, which have
 not the like Force to shove it, besides the
 resisting Clog of its own Weight, which
 they have to conquer; so that 'tis always
 a Disposition to recoil, suspended as it
 is in the Vessels which labour to make it
 rise; and which, to increase the Difficul-
 ty, have not so much as a Place of Re-
 serve, to sustain it in its March; and don't
 supply it with Suckers to facilitate its
 painful Journey. For this also is a Point to
 be observ'd, that the Veins of the Womb
 have no Valves; so that the Blood has a
 deal of Difficulty to gather in this *Viscus*;
 and, of Consequence, has the like Difficulty
 to pass through the Conduits that there
 terminate. Here it is that I am obliged to
 differ in Opinion with Dr. *Freind*, about
 the Manner of explaining this Passage; he
 pretends,

pretends, that, to make way for the Blood to escape, the Arteries must break in their Extremities, that is, towards these Parts where they take the Name of *Capillaries*: he undertakes to prove this Rupture by Principles deduced from the Mathematicks whence he draws Conclusions for his Purpose and, in the Manner he goes about it, he seems to reason very securely, and to advance nothing but what seems infallible and undoubted; and his Argument has all the Air of a Demonstration, victorious and unexceptionable. A Geometrician, who was to prove, that all the Angles of a Triangle are equal to two Right ones, and that the Tangent touches the Circle but in one Point, would not go more boldly about it nor with more Confidence. At the same Time, the Doctor's Demonstration is far from Geometrical; and the Geometrical Certainty will, perhaps, be rather found on my Side. He advances two Propositions establish'd by Mathematicians: 1st. That the Force of a Body increases, as it acquires either more Bulk, or more Swiftnefs, or both together. 2^{dly}. If the Force of the Body is superior to that of the Obstacle which it encounters, this Obstacle will be surmounted. Whence he concludes, that the Force of the Blood augments in the *Plethora*, because there is together, at once, both more Bulk and more Velocity, or more Bulk, because the *Plethora* consists

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abundance of Blood ; more Velocity, because, says he, as there is abundance of Blood, provided it be not flow and viscous, it emits the greater Quantity of Spirits, which flow to the Heart and the Arteries, the more briskly to animate them, and redouble their Contractions. Now, the Vessels are to be consider'd as Obstacles that hinder the Blood from extravasating ; and such they continue to be, whilst they are superior or equal in Force to the Blood they contain within them ; but, when they come to be over-power'd, and the Strength of the Blood is increas'd to that Degree, as to conquer their Resistance, they straight yield, are readily broken, and open a free passage through the Breaches of their Tunicks. Now, the Vessels the easiest and softest to yield, are those of the Womb ; which, being the most attack'd, are least able to make Resistance ; and to comprehend perfectly well how they give way, one needs only to take Notice, that the *Plethora*, at the same Time it augments the Force of the Blood, weakens the Resistance of the Vessels ; for, says Dr. *Freind*, in consequence of the big Volume of Blood that weighs upon the Veins and Arteries, not only on their Sides, but perpendicular, because of the winding Disposition of the Vessels, which, by their Turnings and Counter-turnings, in their Folds and Re-folds, expose their Angles and Corners to

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the direct and perpendicular Impulse of the Fluid : By Means, I say, of this big Volume of Blood, the Vessels are stretch'd and dilated, and thereby the Fibres that compose these Vessels leave an Opening betwixt 'em ; so that their Texture being less close and firm, and more press'd upon, they are more dispos'd to separate, and yield to the Attack of the Blood, if it just so happens, that when they are at their weakest, the Blood has more Force than ordinary, as it truly has ; since the *Plethora* gives it more Strength, as we have prov'd, both by Reason of the Blood's greater Bulk and greater Velocity : The Blood therefore will take the Advantage of the Vessels disadvantageous Situation, which, being violently stretch'd, widen'd, and press'd, lose a great deal of their Resistance, and can offer but a weak Bar against the impetuous Force and Impulse of the Blood. Wherefore, the Barrier being surmounted, because the Fibres of the Vessels being widen'd, and but weakly helping each other, nor able to make any great Struggle against their Disunion, there is but little to hinder the Fluid from breaking its Prison, from tearing their Canals, and extravasating ; the more easily, as these winding Canals, that make a Thousand Circumvolutions, are more expos'd to the Strokes of the Blood, being besides destitute of the Muscles and the Fat to uphold, maintain and defend 'em against the Rupture

Rupture: They must therefore yield to the Impulse of the Blood, and be broken to give it way to escape.

This is the Explication of Dr. *Freind*, and one can't help agreeing with him in this Part of it, that the *Plethora* contributes much to the Monthly Courses; at the same Time we must also own, that notwithstanding all these Advantages which we have just now attributed to the Blood, yet it ought to be contain'd in a just Measure, and restrain'd to certain Bounds. We must confess with *Etmuller* and *Riverius*, that an excessive *Plethora* is more likely to suppress, than to excite the Courses; nay, we may further assert, that this is the most usual, and almost the general Cause of these Suppressions that afflict the Sex. The two famous Physicians, we have just now quoted, account for these Suppressions by the excessive Redundance of Blood, which they make the Cause thereof, much in the same Manner as we impute the Stoppage of Urine to the too great Quantity of Liquor gathered in the Bladder; which Anology is judicious enough; 'tis true, it is not exact, it runs not upon all Four; because (according to the Remark of Dr. *Freind*, who refutes it) the Bladder is much better furnish'd than the Blood-Vessels are, being fortified with a Tunick firm and fleshy, too strong to be torn and broken by the Affluence of Urine, which coming there to lodge but in

a slow, indolent Manner, without any Impetuosity, is not able to make any great Havock there; all that it does in this Case, is so to stretch the Fibres of the Bladder, that they cannot come to themselves again, and have not Freedom enough to contract in order to expel the Urine. That which also contributes a great deal to the Stoppage is, that the *Sphincter* of the Bladder, to wit, the Muscle that stops the Passage thereof, has, in this Case, all the Advantage, and remains Master of the Field of Battle, because its Antagonist, namely, the Muscular Tunick, which serves to drive out the Urine, being stretch'd, dilated, constrain'd and hinder'd, has not Strength enough to counterbalance the *Sphincter*, much less to over-power it. In this respect, I shall believe the Parallel betwixt the two Stoppages to be imperfect; but 'tis just at least in this, that it compares a Blood, which issues not from the Vessels, because, oppressing them by its Weight, it leaves them not Play enough to expel it; I say, as it compares this Blood to the Urine that remains in the Bladder, because being there too abundant, it so dilates the Bladder, that it cannot contract to drive it out. On both Sides we see a super-abundant Fluid; a Solid groaning under the Oppression of this Super-abundance; and on both Sides is observ'd a Canal or Reservoir, choak'd with its Liquor, which it is forc'd

to retain, because it is depriv'd of the Means to discharge it; inasmuch as this Liquor, by its excessive Quantity, triumphs over the Spring of the moving Fibres, which, by being more stretch'd, lose all their Power and Play. Therefore our two Authors Comparifon is, in this Sense, very just; and the Reasons we shall alledge in the Sequel will help to fet off the Advantage of it, and render its Validity the more sensible.

Dr. *Freind* pretends, that the *Plethora* can never, of itself, cause such a Suppression, and does never cause it, unless when join'd with a Viscosity and Slowness of the Blood; for, says he, the Particles of the Blood being incorporated, and close link'd together, form such a gross Body as can by no means be insinuated into the Capillaries, where, of Course, it forms an Obstruction: Now, these Vessels being stopt, thro' which the Blood us'd to pass, it remains shut up in the bigger Vessels, which are too strong to give it Vent through the Rupture of their Tunicks.

At the same time, according to this Author's Reasons, one might demonstrate, that these Vessels, big and strong as they are, ought to crack at last, and be broken. For, if the big Vessels are more robust than the small, they are also attack'd by a greater Quantity of Blood. In the natural State, they are counter-balanced, and in an *Equilibrium*

librium with the Fluid; but, in the present Case, the Fluid must get the better, because it augments in Strength, by reason of its Bulk being swoln and re-inforced from the Reflux of the Juices that spring out of the Capillaries; whilst the Vessels extremely furcharged, lose their Power, and cannot hinder the Interstices of the extended and suffering Fibres from being forc'd by the Affluence of the Blood that seeks an Out-let, and, by its exorbitant Mass, has Power enough to make itself one thro' the Dyke whose Resistance is diminished in proportion as the Strength of the Blood is encreased. This is what might be maintain'd on our Author's System, and by his own Proof. Among Physicians, there are some who explain the monthly Courses by the Rupture of the Vessels; others again take a different Road; but it seems as if People were only dreaming over this Point, and shew an Indifference that does not appear to be well grounded: Yet, as we have here establish'd the Sentiment of Dr. *Freind*, which is the most in vogue, it may not be amiss to say something of another Opinion, which tho' less common, does not fail, nevertheless, strongly to engage us in its Favour. The Blood of Women being, for the Reasons we have declar'd, liable to gather in the Vessels, it should, of Course, happen that the Blood tending particularly to the lower Parts, and the Veins having no Valves

The Arteries may bring more Blood than can
 be return'd by the Veins. Wherefore, the
 Veins, being fill'd to the Top at a certain
 time, cannot receive the Blood that is still
 brought afresh to them from the Arteries:
 This Blood being once shut out from the
 Veins, is still less liable to return from
 whence it came, whither then will it go?
 That will become of it? Thither, no doubt,
 where it finds least Resistance, and that is,
 on the Side of the Lymphaticks; which be-
 ing only made to admit the *Lympha*, and
 convey it to the *Matrix*, in order to moi-
 sten and lubricate this *Viscus*, are oblig'd
 to yield to the Torrent, to an extraordina-
 ry Extension of their Texture, and suffer
 violence in their Diameter, in order to re-
 ceive this superfluous Blood, push'd out from
 the Arteries, and rejected by the Veins.
 Now, as the Lymphaticks must terminate
 in some Issue, the Canals, or excretory
 ducts, destin'd to the Discharge of the
Lympha, serve here to give an Out-let to
 the Blood, and discharge it.

This mechanical Account, is it not more
 easy, more simple, more plain and satisfactory?
 And does it not more Honour to Nature, than
 the System of the Rupture of the Vessels?
 It is a constant Maxim with Philosophers,
 that Nature does every thing by Ways the
 most simple, and least expensive. Now, I
 ask, on which of these two Sides it costs
 the most? In the first Place, does it not
 impair

impair the Vessels much more, by making them so often to suffer a Solution of their Continuity? Is not this Hurt done to the Substance in its solid Parts too dear a Purchase? and the frequent tearing of the vascular Tunicks, which must every Month be broken, is not this paying too great a Price for the Exit of this Portion of superfluous troublesome Blood? But by the other Way, how will it cost so dear? Only a little Enlargement of the Bounds of the lymphatic Arteries, a little Straining of their Diameter, which is far from making such Havoc as this Rupture does, yet, at once, does all the Business. But let us carry this Point a little further. Dr. *Freind* pretends to demonstrate how the *Plethora* procures the Flux. He has Recourse to the Force of the Blood, which over-powers the Force of the Vessels; and, to establish in the Blood this Superiority, he says, that the Blood encreases in its Mass and Velocity while the Resistance of the Vessels diminishes; because their Fibres being stretch'd and widen'd, are thereby depriv'd of their strict Union and Connection, in which consists their Force. The Author admits in the Blood a considerable Velocity; and advances, at the same Time, that the Vessels are stretch'd and restrain'd as if the Swiftness of the Blood did not proceed from its being so briskly jerk'd, beaten and push'd forward, by the powerful Oscillation of the Vessel

Vessels, which being stretch'd and restrain'd, are not able to push the Fluid with so much Vigour; whence it necessarily follows, that the Fluid must lose of its Velocity, instead of gaining more, as the Author pretends. Dr. *Freind* would have avoided this Perplexity, had he taken Care to observe the moving Force of the Blood, and had explain'd himself a little more particularly upon it. Rejecting, as he does, the Hypothesis of Fermentation, it is to be presum'd he subscribes to the Oscillation of the Solids, as in Truth he seems to hint in several Parts of his Book. Now, this System makes the Agitation, or progressive Motion of the Fluid, to depend upon the systaltick Virtue of the Solid, whose Spring being more or less animated, makes the Blood and all the Humours move with more or less Precipitation. This is a Principle which we think cannot be denied by Dr. *Freind*; and yet this Principle makes against himself, because thence it follows, that in Proportion as the Vessels lose of their Ease and Liberty, the Blood, far from taking the Advantage of their Weakness, to attack and break them, as it does in the Sense of this Author, does it self abate of its Impulse, and consequently of its Force, and so shares in the Feebleness of the Vessels, instead of triumphing over it. This carries us yet farther.

This Swiftmess of the Fluid being a pure Effect of the strong Vibration of the Solid,

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which

which at once both contains and chafes it, is not a Portion of the Force of the Blood, but of the Force of the Vessels, which, without doubt, are strong enough to defend themselves against the Irruption and Insult of a Humour that has no other Arms than what they vouchsafe to lend it, and which would remain dormant, lazy, languishing, if the Vessels were not so kind as to put it in Motion. Here now, pray what has the Blood to boast of, poor and beggarly in itself! What has it, which it hath not receiv'd? And if it has receiv'd all it hath, wherewith can it prevail? How can it have the Insolence to employ its Strength against those that gave it, and turn its Arms to the Disadvantage of those that arm'd it? Hence we may plainly see, that the Blood having no Assistance but what it borrows, cannot thence take any Advantage against the Vessels; so that there only remains its own Mass whence it can draw any Succour. But here visibly falls our Author's Demonstration; for the Force of the Stroke, or of the Percussion, being infinitely greater than any Pressure, as he himself says after *Borelli*, *Vis actus omni pressione infinito major est*; and the Percussion being the Effect of the Velocity, which 'tis confess'd does not proceed from the Blood's own Force, it consequently follows, that the Blood, to break the Vessels, wants just that which is the most proper and conducive to this Effect; so that

that the Force of the Percussion failing, the Blood has no more Force, than from the Pressure of its own Mass; and this, 'tis allow'd, is not so powerful by far as the Percussion. Whence, after all, one may judge, that *Borelli's* Proposition is false in one Sense, and in the present Case may be denied; for the Blood swiftly mov'd attacks the Vessels, and yet it is prov'd, that the Force of the Attack is less than that of the Pressure; because the Pressure comes from the Mass, and the Mass is properly that which belongs to the Fluid: It is its own proper Force, and it can do more with the Addition of one Degree of Mass, than with that of twenty extraordinary Degrees of Swiftnefs; the Reason whereof is evident. 'Tis, for that by its additional Degree of Mass, it weakens the Vessel, by widening its Fibres, and rendering them less able to withstand their Dis-union, which it never can do by its Swiftnefs, suppose it augmented to what Degree you please. Therefore, the Force of the Pressure, unaccompanied with that of the Percussion, is the only Choice they have, who, after *Dr. Friend*, explain the Monthly Courses by the Rupture of the Vessels; for, this being pre-suppos'd, the Blood can never be in too great a Mass, and the Excess of the *Plethora* can never do any thing but Good: The Blood will have the more Force, as it is the more abundant and less hurried; for as soon as it

fails of its Swiftnefs, that will be a Sign that the Veffels have not Spring enough to push it vigorously ; and, in this Cafe, the more Bulk it requires, the more it reftains them, the more it widens their Fibres, and puts them out of Condition to fustain its Weight, to ply to its Volume, and refift its Power ; can any thing be more advantageous to him than this Situation ? In this System let us examine how we may explain the Monthly Suppreffions, and what way we muft proceed to remedy the fame. We are going to obferve, that it is not indifferent in Practice to make Choice either of the Rupture of the Veffels, or of the Intrufion of the Blood into the Lymphaticks as one pleafes ; for thefe two Systems by no means agree ; they offer for the Cure quite different Views and contrary Indications : It is then very important, heedfully to diftinguifh them ; to chufe one of them and to take great Care which of the two we chufe, and to which of the two we adhere here. This is not to be done with Indifference, as but too often happens, but very carefully, with the utmoft Exactnefs, and after having maturely thought upon it. When the Blood gathers, fays the * Author the Pulse then grows more ftrong, more lively, more quick, till the *Plethora* is rais'd to the higheft Degree ; for there are certain Limits of Plenitude, beyond which

* Cap. 10.

the Quantity of Blood cannot augment,
 without affecting and altering its Quality;
Est enim certus quidam plenitudinis gradus,
ultra quem, illa qualitate sanguinis,
augeri nequeat quantitas; for the *Plethora*
 cannot be long a gathering, without
 slackening the Pace of the Blood; *Plethora*
enim diu nequit increscere, quin comitem
sibi adsciscat sanguinis lentorem: Since,
 continues he, towards the Approach of the
 Flux, the Vessels are stretch'd and dilated
 to the Degree that I have mentioned; be-
 cause the Quantity, and consequently the
 Force of the Blood is increas'd almost a
 Tenth. If the Courses fail twice successive-
 ly, the Mass of the Blood will be a Fifth
 Part augmented, unless the Flux be equall'd
 by some other Evacuations. Therefore, the
 Pressures which the circulating Fluid makes
 upon the Sides of the Vessels must augment
 in Proportion; which said Pressure the
 Vessels cannot sustain, without being strange-
 ly put to it, labouring already under the
 Load of the Blood that escap'd in the
 first Month; *Adeoque eadem ratione in-*
crescit ea, quâ latera vasorum a fluido cir-
culante urgentur, Pressio; quam a vasis
citra virium noxam sustineri posse nemo
credet, qui quam graviter ea sub primæ
periodi incursum laborent meminerit: The
 Slowness of the Blood may be supposed
 from its great Abundance, which swells so
 much, that the Vessels, to what Degree so-
 ever

ever they yield and stretch themselves, cannot, without breaking, give it a Space sufficiently vast; so that the Mass of the Fluid is restrain'd and imprison'd in a Vessel whose Capacity it far surpasses: *Lentor al ipsa copia oriri potest, quæ ita supra modum intra vasa turgescit, ut ea, utcumque distenta, satis amplum sanguini circulando spatium præbere nequeant, nisi penitus dissiliant fibræ, ita ut cum uberior sit, quam pro vasorum capacitæ fluidi moles, majorem patiatur retinentiam sanguis redundans*: Who would think that these Reasons, which seem to tend to explain the Flux, should end, nevertheless, in proving the Suppression? That to shew how the *Menses* are stopt, one should make use of all the Conditions requisite to make them flow? These Conditions are on one Side the great Stretching of the Fibres in the Vessels, which hinders them from resisting their Division, and puts them in the nearest Disposition to be dis-united; and on the other Side, the exorbitant Volume of the Blood as compact, as massive, as close in its Texture, as the vascular Fibres are loosened, and which bears hard upon the Sides of the Vessels that contain it; is it not visible, that all the Advantage is here on the Side of the Blood? The Solid is dilated; the Fluid is close knit; behold! here is the Extension and the Pressure that is demanded: As for the Swiftnefs or Percussion, we have proved,

proved, there is no Occasion for it : The Fluid then has here all the Force it can have ; since it has an enormous Reinforcement of Mass, in which, as we have observ'd, consists all its Power ; and the Solid as weak as it can be ; since 'tis own'd by the Author himself, that it cannot, without Pain, *Citra virium noxam*, sustain the Weight of the Fluid ; and that the Vessels, however dilated, cannot, without bursting, give a free Space to the Blood : *Nisi penitus dissiliant fibræ* : Then what can hinder this Bursting ? Why don't we immediately see the Fibres crack, they who lose as much of their Resistance, as the Blood acquires of Strength ? All morbid Suppression, says * Dr. *Freind*, depends either on the Fault of the Vessels, or on the Fault of the Blood ; the Fault of the Vessels consists in their Restraint ; that of the Blood, in its Slowness ; 'tis agreed, that the Vessels are not here in a State of Constriction, but, on the contrary, that they are in great Distension : So here is no Fault of theirs, neither is the Blood to blame, if it be slow, for its Slowness only proceeds from its great Quantity, in which all its Strength consists ; so that this Slowness, far from impeding, rather provokes the Flux ; for, if the Blood was less slow, the Vessels would be less restrain'd, more left, as it were, to themselves, and enjoying the Advantage of their Ease

* Cap. 10.

and

and Liberty, as the Blood would have that of its Velocity; they would, by Consequence, be less dispos'd to be broken. So the excessive *Plethora*, and the extreme Slowness, far from causing Suppressions cannot, on the System of the Rupture of the Vessels, but rather procure, and favour in the Sex this particular Evacuation. Dr. *Freind* calls it a Vice in the Vessels, to be in a Condition to hinder themselves from being broken; this is indeed a Vice in his System, and in respect of his Opinion, but absolutely, and in the main, it is none. On the contrary, it is a Frailty, a Dishonour, a Defect in them, so to break: For the Vessels to be of a Structure sufficiently solid, sufficiently furnish'd and fortify'd, seated sufficiently to Advantage, strong enough to resist the Dis-union of their Fibres, to withstand their breaking, and stoutly to maintain themselves sound and whole, this is not a Defect, 'tis a Perfection. On the contrary, Dr. *Freind* calls Slowness a Vice in the Blood, which however is none, on his System, and according to his Hypothesis, though in the main, and in Fact, it is one; for the Slowness of the Blood, tho' it be absolutely in itself an ill Quality, is a good one in the present Case, it being that which gives Power to the Blood, and makes it strong. It follows from thence, that the Blood can never be too slow, nor too abundant, to procure the Courses; then how are the

stop

apt? how account we for their Suppression?
 on? *Etmuller, Riverius, Dr. Freind* him-
 self, agree, that an excessive *Plethora* may
 cause this Suppression; but how is this to
 be explain'd in the Doctrine of our Author?
 Is it not evident, that the more enormous
 the Quantity of the Blood is, the Distention
 of the Vessels is made the more consider-
 able, and the readier they are to break?
 In the Hypothesis of the Blood's Intrusion
 into the Lymphaticks, nothing is more easy
 to explain than this Suppression; the Blood-
 vessels being stuffed, distended, dilated, and
 all groaning under the oppressive Weight
 of their Fluid, have not Play and Liberty
 enough to expel it into the Lymphaticks,
 and to chase it thro' the Pipes that discharge
 the Excrement, so as the Fluid cannot be re-
 moved, chased, drove on, because the prodi-
 gious Mass restrains the Solid, stops and weak-
 ens its systaltick Virtue; so that it remains
 stagnant in the sanguine Capillaries, for want
 of a Force strong enough to push it into
 the Lymphaticks, and, not being able to
 make its Way through the excretory Chan-
 nels, it remains engag'd in the Vessels, which
 with its Bulk it oppresses, and makes the
 sex feel the over-whelming Weight that
 attends the Suppression of their Courses.

Every morbidick Suppression, says our
 Author, which depends upon the Fault
 of the Vessels, or of the Blood, offers two

Indications; the one to open the Canals
 that are obstructed and stopp'd; the other to
 correct and reduce the Blood: The Fault
 of the Canals, continues he, is either to
 grow hard and stiff by a natural Dryness, or
 to be contracted by a sudden Coldness, in
 such wise, that they oppose the Impulse of
 the Blood, and resist their being broken.
 To remove this Impediment, according to
 the Opinion of this Illustrious Physician, we
 must relaxe the Fibres; but there is an Equi-
 vocation in this *Relaxe*, which 'tis worth
 while to clear up; we usually understand
 by Laxity or Relaxation, a State opposite
 to Tension, a State where the Fibres are
 supple and not stretch'd, where they act
 freely, and without Restraint; because
 being sufficiently moisten'd, they are flexible
 and pliant; whereas Dr. *Freind* seems to
 understand by Laxity, the State of the Fi-
 bres widen'd, pull'd, and stretch'd into
 strong Distention: So, according to this
 Idea, the more the Canals are swell'd with
 the Abundance of the Liquid, the more the
 Fibres will be widened one from another
 and the more they will be relaxed; whence
 it follows, that, to effect the Relaxation
 taken in this Sense, and on the present Hy-
 pothesis to make the *Menses* flow, the surest
 Means is to draw into the Pipes as much
 as one can, wherewith to swell, obstruct
 stuff and clog them. 'Tis visible, that all
 this strangely dilating the Vessels, so we
 den

ens their Fibres, that they scarce touch
 one another; and this procures the Laxity
 that Dr. *Freind* demands. The Laxity
 that I first mention'd, taken in the natural
 and ordinary Meaning of the Word, is quite
 different from this; and, on the System of
 Dr. *Freind*, as much contrary to the Month-
 ly Courses, as the other is favourable to
 them; the one is procured by the Supple-
 ness and Flexibility, the other by the Force,
 the Torture, the Pulling and Stretching of
 the Fibres: Wherefore, if it be proper, in
 order to make the Courses flow, that the
 Fibres should be pull'd, stretch'd, widen'd,
 and forc'd, nothing can be more adverse and
 opposite to this Flowing, than this State is,
 where the Fibres are supple, flexible, pli-
 ant, at their Ease, their own Masters, un-
 restrain'd, no way suffering, no way mo-
 lested. This pre-suppos'd, we are going
 to see which of these two Relaxations
 Dr. *Freind* proposes to us as the Subject of
 our Consideration; and we shall observe,
 upon this Occasion, that he does not too
 well, here, agree with himself; for, as
 these two Relaxations are incompatible, to
 admit the one, is excluding the other; tho'
 Dr. *Freind* seems as if he would chime in
 with both. For this End, saith he, name-
 ly, to conquer the Resistance of the Vessels,
 and to procure the Relaxation of the Fi-
 bres, we must apply exterior Remedies
 moderately warm, such as Fumigations,

Baths; and Fomentations, prepar'd with emollient and penetrating Herbs: *Ad hunc finem tepide adhibentur externa Remedia, qualia sunt Suffitus, Balnea, Fomenta, ex herbis emollientibus, & penetrantibus confata.* This is proper to procure that Sort of Relaxation which consists in the Suppleness and Flexibility of the Fibres, but not the other, which consists in the stretching, widening, and constraining them, to render them less able to resist the Impulse of the Fluid: *Contractu autem vasorum inhibito, vasorum latera laxius explicantur, & fluido impingenti debilius resistunt.* If one has a Mind to break the Vessels, methinks 'tis going the wrong Way about it, to make them supple, pliant, tractable, yielding; for the more flexible and yielding they are, the less they are dispos'd to be broken; the more supple, sure the less frangible; a dry Cord will sooner break than a moist one; and if Dr. *Freind* will be pleas'd to take a little Notice of this, he will observe, that a dry and hard Vessel is more frail and easy to be broke than a pliant, soften'd, moisten'd one; what View then can this able Physician have? and what Indication leads him to relaxe the Vessels, by Emollients, such as Baths, Fumigations, Fomentations? I here appeal to the Judgment of this excellent Author himself, so well vers'd as he is in Mechanicks; perhaps I am dazzled with a false Light myself; yet, till I am enlight-
ned,

ned, I shall always imagine, that the Blood in its Motion will sooner break Vessels hard and dry, which make Head against it, are directly expos'd to the full Strength of its Impulse, to the Force of its Collisions, more within the Reach of its Sallies, more the Mark of its Impetuosity, and of its fiercest and briskest Attacks, than Vessels softened, which, by their yielding Suppleness, dexterously avoid all the Thrusts the Blood can make against them; as we see the pliant Reeds elude the Attack of the most outrageous Tempests, whilst Oaks that stand all butt against them, and stiffly sustain the Assault, lye rooted up, and prostrate upon the Ground, the illustrious Victims, and the magnificent Trophies of the furious Tempest's Power. The Cold too that stiffens the Fibres seems also to render them the more frail, and liable to break. This being so, who does not see that Desiccatives are much more proper than Emollients? Who does not here see, that instead of softening the Vessels that are too dry and hard, and slackening the Fibres that are too stiff, we must maintain them in their Dryness and stiffness, and far from diminishing any thing of these, we must augment them as much as we can; because we shall infallibly render the Vessels and Fibres more frail, in proportion as we shall render them more dry and stiff; the more Violence we do them, the more Stress and Torture we put them

them to. Emollients, in this Case, seem quite contrary to our Purpose, because they seem more proper to make the Conduits play, by setting them at their Ease, than to make them yield to such a Rupture as our illustrious Author desires. *Hippocrates*, he observes, in a Suppression of the Courses, advises to begin with a Purgation by Fomentations; *suppressis mensibus fomenta purgationi esse premittenda mone* *Hippocrates*: But if the Purgation operates in the same Manner as they say the Fluxes do, by the Rupture of the Vessels, the Use of Fomentations, far from being serviceable here, would be hurtful; but as it is confessed that the Purge don't work in this Manner but by quite different Ways; to say that the Fomentation is useful here, is at the same time to say, that it is not proper for the Fluxes, which differ so much from the Purgation: We foment before Purgation to make the excretory Ducts more yielding and more disposed to emit their Juices, that they may the better hearken to the Instigation of a Purgative, and be the more efficaciously persuaded to do what we would have them: This is our Drift in Fomentations, and this does not drive at breaking, tearing and disjoining the Fibres, but to soothe, temper, refresh and supple them to give the Juices we design to discharge, free, easy, natural Passage thro' the Issue, the Pipes destin'd for that Purpose. So the

to foment in the Suppression of the Terms, all the same as in Purgation, is to go against the Indication that prescribes the Rupture of the Vessels; 'tis to have opposite Views, and take opposite Courses to the System in Question. Dr. *Freind* observes, that the Vessels are more easy to open in Summer, than Winter; yet they are more stiff, more stretch'd, and, of Consequence more frail, in Winter; so that their Opening seems to depend less upon the Rupture than the Winter favours most, than upon the Disoppilation of the Capillaries, which the Summer's heat promotes most, by means of which the blood flows more freely, its Velocity is reinforced, its Impetuosity is augmented, and the Rapidity it contracts in this charming season, prepares it the better to pass thro' the Lymphaticks, and to escape thro' the excretories. Here behold the Flux re-established; let us now come to the Way of removing the second Cause of Suppression, acknowledged by Dr. *Friend*, which depends upon the Fault of the Blood, and to which he makes an insensible Transition. But, says he, if the Vessels continue too long hard, the *Plethora*, which augments every Day, corrupts, and at last perverts the Blood, whence we have before drawn another Cause of Suppressions, which is more frequent: *Quod si diutius persistit asorum durities, Plethora indies accretans sanguini tandem vitium inducit; unde alte-*

*altera, eaque multò frequentior suppressio-
rum mensium causa in prioribus deducta
est.* Here we see, beyond Doubt, the ex-
cessive *Plethora*, which we have shewn was
so proper to break the Vessels, acknowledg'd
however as the principal Cause of the Sup-
pression. This seems to me very hard to
clear up. Pray don't forget this last cited
Passage, for we shall want you to remem-
ber it in the Sequel.

We would re-fettle the Courses; 'tis a
thick, abundant, viscous Blood that stops
them; we must change its Quality. Now
the Source of this Quality is its Excess of
Quantity; it is this we must fall foul of
the Point is to correct the Slowness: But
the Slowness, 'tis own'd, produces the ex-
cessive *Plethora*; our Affair is then with
this *Plethora*; 'tis this we must first attack
Upon this Principle, we immediately con-
ceive Bleeding to be of Use. *Bellini*, as
we are told by Dr. *Freind*, proves, that
Bleeding increases the Motion of the Blood
here we should distinguish: Bleeding raises
the Fever, and cures it; quickens the
Blood, and makes it run slower: Those who
have a right and just Notion of the animal
Mechanism perceive the Reason of these
seeming Contrarieties; the Vessels being
stuff'd excessively, have not Freedom enough
to exert their Oscillations, to kindle the
feverish Motions, and to conquer the great
Bulk of stagnant Humours, by hot Strokes

of Syftole and redoubled Vibration, we let
 Blood, the Resistance is diminifhed, the
 Solids are let loofe, the Fluids are dif-
 engaged, the Blood is fet a running; this
 is the Cafe of an Apoplexy, to which
 it is wholefome that a Fever fhould fuc-
 ceed; the Solids, after having been fo long
 opprefs'd, are, at laft, at their Eafe, fet
 at large, and in full Power, and make
 the agglomerated Fluids that had conspir'd
 againft them feel the Force of their Blows,
 the Effect of their Refentment, and the
 Experience of their Revenge. The Blood,
 after firft Bleeding, tho' ftill abundant enough
 to vex, irritate, and ftretch 'em, yet is no
 more able to over-power and conquer 'em.
 Mean while, the Bleeding, having fet the
 Blood in Motion, will in a little time abate
 its Sallies, and refrain its Frolicks. The
 Resistance of the Fluids, that maintains
 the Solids in their unbridled Ofcillations, in
 proportion as it diminifhes, will calm and
 reduce them to their natural Vibrations;
 the Fury of the Veffels will abate in pro-
 portion as the Mafs of the Blood diminifh-
 es; becaufe, by how much the Bulk of the
 Blood is leffened, by fo much lefs Oppofiti-
 on will the Veffels feel; the lefs, of courfe,
 will they be excited to furious Motions,
 and the more difpofed to recover their ufu-
 al Courfe, their ordinary Ofcillations, their
 natural Motions: Then, as the Blood con-
 tracts its Slownefs from its exceffive Abun-

dance, the Bleeding diminishing this, shews us how much it contributes to correct the Slowness of the Blood. This being pre-supposed, one would think the Doctor should favour this Remedy, and one would not imagine, how, in consequence of his Principles, he could advance, that in the Beginning of a Disease, the Blood being too slow, it should not be proper to let Blood, unless there be Reason to hope, that thereby the Viscidity of the Blood may be corrected; and even tho' there should be an Appearance of this, yet ought not Bleeding to be chosen, if any other Method can be thought of, to restore the Blood to its Velocity, without lessening its Volume. But what is strangely surprizing is, to see such a Man as *Dr. Friend*, in whom sound Judgment takes Place so much of Prejudice, giving into vulgar Notions and Fancies without Foundation. He has Regard to the Weakness of the Persons who suffer in these Stoppages, which does not proceed from Inanition, but Over-Repletion; not from a Scarcity, but from a Stock of Forces stow'd in too narrow Compass, which only want to be set at large, as they are by Bleeding; a Weakness however, from which a Pretence is drawn, to save that Blood, which wants to be diminished, in order to exert its hidden Force, that is quite stifled by its own Redundancy; a Weakness whence a Counter-Indication is drawn against Bleeding, to cure it, to make

its unactive, dissembling Force exert and declare itself. Women, they usually say, are so weak in these Suppressions, that they cannot bear Bleeding, which causes such a prompt and brisk Revolution in the Humours: Is not this Language altogether vulgar? 'Tis what the common Sort of People usually say thro' Prepossession, rather than Reflection. Dr. *Friend* also says, *Neque hoc sanè prætermitti debet, quod in iis qui-
bus suppressi sunt menses, ita ferè vires im-
minutæ sint, ut sanguinis missionem, à quâ
adeo expedita inducitur humorum mutatio,
minus sustinere queant.* At this rate, Plethoricks should not be let Blood; for the *Plethora* takes away their Strength; and we see that the more Blood they have, the weaker they are. But this Notion was too unworthy of Dr. *Freind*, for him to fix for any time upon it; so 'tis not long before he goes off from it; Bleeding happens to fall into Disgrace; but a few Lines lower, it again recovers its Credit, and in the very same Case where it underwent the Disgrace. Sometimes, however, says our Author, the Blood gives certain Symptoms of its State and Constitution, which, carefully consider'd, oblige to open a Vein, and to open it too with Success. One of these Symptoms may be a Pulse full and weak, which is sometimes observed in the Beginning of a Distemper; nothing but Good can come of Bleeding upon this Occasion; for thence

results a greater Velocity, and, of Consequence, in the Opinion of Dr. Friend, the greater Force of the Blood. *Nonnunquam tamen sanguis ea de se præbet indicia, quibus si quis diligentius studuerit, venam haud inauspicatò poterit secare: talis indicii exemplum sit pulsus plenus & imbecillis, qui morbo nondum inveterato aliquando observatur; itaque ad hunc modum constituto pulsus venæ sectio, si adhibita sit, sanguis momentum intendet.* Since a full and weak Pulse allows, and even obliges to bleed, the Weakness of People afflicted with these Suppressions, is not therefore a good Reason to forbear Bleeding; for, with a full and weak Pulse, as our Author observes, and which, in his Opinion, prescribes Phlebotomy, Women cannot but be weak. It is not the Weakness then that forbids Bleeding. The Reason Dr. Friend adds to authorize the Precaution he advises, in order to diminish the Blood, is not very sure; he says, that when the Arteries are so full, that the Tunicks are stretch'd, and take up a greater Space, 'tis a Sign that the Humours are not yet thickened; for, if their Mass was considerably thick and fizy in its Texture, it would take up less Room, because its Particles would be less close, and the Arteries thereby less stretch'd. This is however, what a Body cannot trust to, because the Mass of Humours, close thicken'd and condens'd, may happen to be

in such Abundance, as to stretch the Tunicks to a considerable Dilatation, without abating the Velocity of the Humours, whose Redundance is no way incompatible with their extreme Condensation. So that, from the Arteries taking up no great Space, there is no concluding, that the Fluid they contain is very massive; for it may be massive, compact, and close in its Texture, at the same time that it is ample, large, and extended in its Volume. A little Attention here will shew there is no Repugnance in this. A little further, the Author says, that the vascular Tunicks, unbent by the Bleeding, less resisting the Blood that strikes upon them, the Force of the Stroke is thereby weakened: *Tunicis sanguini affluenti minus renitentibus deficit ictus magnitudo*. At this rate, 'tis ill done to bleed, since it weakens the Force of the Blow, which Dr. *Freind* makes the principal Promoter of the Fluxes. The Business therefore is not to slacken the Tunicks, nor to render them supple and pliant, but, on the contrary, to stretch them all we can, and to render them stiff, dry, and hard; for Dr. *Friend* agrees, that in this State they make the most Resistance. Now, according to his Account in his 4th Mathematical Proposition, * the Motion lost (that is communicated) is proportioned to the Resistance; *motus deperditus est ut resistentia*; but the Force of the

* Cap. 5.

Strokes is also measured by the Motion lost:
In percutientibus corporibus ictuum magnitudo motui deperdito proportionalis est.
 Then, as there is most Resistance made by the Fibres stretch'd, stiff, dry, and hard, the Blood that strikes upon 'em loses still the more of its Motion, since the Motion lost is answerable to the Resistance made: Therefore the Force of the Stroke is the greater in these Fibres; since the Force of the Strokes are suitable to the Quantity of the Motion lost. Therefore, in fine, these Sorts of Fibres must sooner crack, than Fibres that are supple, slack, and flexible. The Blood is supposed abundant, observe here then the Force! the Fibres are suppos'd to be widened and distended, behold Weakness here! Wherefore, all the Power and Advantage is here on the Side of the Blood. Now, if the Force of a Body surmounts the Force of the Obstacle it has to encounter, this Obstacle must give way, according to the second Proposition: *Si momentum corporis sit majus quam contraria impedimenti vis, id impedimentum removebitur* the Vessels, in this Case, must be broken and cannot hinder the Blood from extravasating. Upon these Principles, settled by Dr. Freind himself, methinks, I may, without the Imputation of too much Presumption, defy him to explain the Suppression of the Fluxes by an excessive *Plethora*, and by the Dryness and Hardness of the Vessels which

which make too great a Resistance ; for all
 this wonderfully contributes to the Flux,
 as I think has been heretofore sufficiently
 demonstrated. Our Author is inclin'd to be
 of Opinion, that Bleeding should be us'd
 rather after than before the Purgatives and
 Emmenagogues, which are the Remedies
 more especially design'd to promote the re-
 gular Courses. The Reason he gives for it
 is, that the Purgatives and Emmenagogues
 break, refine, and attenuate the gross com-
 pact Humours ; whence the Blood being
 more clear, is more dispos'd to be divided,
 separated, dislodg'd, and to acquire Force,
 after Bleeding : But this Advice seems con-
 trary to what he gives before, where he
 advises not to let Blood, if there be any
 other Means to increase its Velocity, with-
 out lessening its Quantity ; because in Bleed-
 ing we diminish the *Plethora*, which *Ple-*
thora contributes in a particular manner to
 the Force of the Flood, and which, if we
 leave it entire, cannot but augment its
 power. Now, since the Remedies which
 Dr. *Freind* would prescribe previous to the
 bleeding, would break the compact Texture
 of the Blood, rectify that, and, of Course,
 give it Velocity, why not stop there ? Why
 meddle with the *Plethora*, which is so com-
 mended, and held so sacred (as we may say)
 in the present System, that we can't be
 without it ? Why not rather spare it, when
 we have procured the Velocity of the Blood
 ano-

Strokes is also measured by the Motion lost:
*In percutientibus corporibus ictuum magni-
 tudo motui deperdito proportionalis est.*
 Then, as there is most Resistance made by
 the Fibres stretch'd, stiff, dry, and hard,
 the Blood that strikes upon 'em loses still the
 more of its Motion, since the Motion lost is
 answerable to the Resistance made: There-
 fore the Force of the Stroke is the greater
 in these Fibres; since the Force of the
 Strokes are suitable to the Quantity of the
 Motion lost. Therefore, in fine, these Sorts
 of Fibres must sooner crack, than Fibres
 that are supple, slack, and flexible. The
 Blood is supposed abundant, observe here
 then the Force! the Fibres are suppos'd to
 be widened and distended, behold Weakness
 here! Wherefore, all the Power and Ad-
 vantage is here on the Side of the Blood.
 Now, if the Force of a Body surmounts
 the Force of the Obstacle it has to encoun-
 ter, this Obstacle must give way, according
 to the second Proposition: *Si momentum
 corporis sit majus quam contraria impedi-
 menti vis, id impedimentum removebitur.*
 the Vessels, in this Case, must be broken
 and cannot hinder the Blood from extravasat-
 ing. Upon these Principles, settled by
 Dr. Freind himself, methinks, I may, with-
 out the Imputation of too much Presumpti-
 on, defy him to explain the Suppression of
 the Fluxes by an excessive *Plethora*, and by
 the Dryness and Hardness of the Vessels
 which

which make too great a Resistance; for all
 this wonderfully contributes to the Flux,
 as I think has been heretofore sufficiently
 demonstrated. Our Author is inclin'd to be
 of Opinion, that Bleeding should be us'd
 rather after than before the Purgatives and
 Emmenagogues, which are the Remedies
 more especially design'd to promote the re-
 gular Courses. The Reason he gives for it
 is, that the Purgatives and Emmenagogues
 break, refine, and attenuate the gross com-
 mixed Humours; whence the Blood being
 more clear, is more dispos'd to be divided,
 separated, dislodg'd, and to acquire Force,
 after Bleeding: But this Advice seems con-
 trary to what he gives before, where he
 advises not to let Blood, if there be any
 other Means to increase its Velocity, with-
 out lessening its Quantity; because in Bleed-
 ing we diminish the *Plethora*, which *Ple-*
thora contributes in a particular manner to
 the Force of the Flood, and which, if we
 leave it entire, cannot but augment its
 power. Now, since the Remedies which
 Dr. Freind would prescribe previous to the
 bleeding, would break the compact Texture
 of the Blood, rectify that, and, of Course,
 give it Velocity, why not stop there? Why
 meddle with the *Plethora*, which is so com-
 mended, and held so sacred (as we may say)
 in the present System, that we can't be
 without it? Why not rather spare it, when
 we have procured the Velocity of the Blood
 and

another Way, by other Means than Bleeding? Hence we see, that Dr. *Freind* has establish'd nothing certain here upon the Matter of Bleeding in Cases of Suppression. So we don't know what to stick to, nor what to build upon in his System. He does not explain himself precisely enough; he does not sufficiently dive into, and unfold the Matter: He sometimes loses Sight of the Principles to which all should tend and by that means he is led into Perplexities, and falls into Contradictions but too frequently; of all which I shall take no Notice; for I do not here pretend to trace Dr. *Freind* thro' all the Windings and Deviations that appear in his Book.

Before we pass on to an Article so important, as to inquire of the Place where it is fit to bleed, whether it be in the Arm or in the Foot; I desire it may be call'd to your Mind, that the Swiftnefs of the Blood is the principal Foundation of our Author's System and yet we have prov'd it to be a ruinous Foundation; since the Blood cannot apply to the Disadvantage and Prejudice of the Vessels, a Strength it receives from them and a Velocity for which it is obliged to them: So that the Doctrine of our Author is, in that Point alone, sapp'd from the very Foundation. This is what I desire may be well remember'd, once for all; for I have no Inclination to be troublesome, by repeating it so often over: *Lindanus*

Et m

Etmuller counsels, at the Approach of the Courses, to bleed in the Arm; whereas in the actual Course, already begun, he sends you to bleed in the Foot; which he never orders to be done, but in a Course either actually flowing, or suddenly stopp'd: And *Etmuller* accounts for this Doctrine in the following Manner.

Upon the Approach of the *Menses*, the Blood being abundant and swell'd, Nature exerts all her Efforts to precipitate it to the lower Parts; but the Conduits being small, cannot, on a sudden, yield and open so soon; on the contrary, being stretch'd and constrain'd, they refuse a Passage to the Blood; because they are not at Freedom to contract themselves, and make way for the Blood. In this Circumstance, if you bleed at the Foot, you draw the Blood downwards, you charge the *Matrix* more, you add Clog upon Clog, and raise the Disorder to the highest Degree. On the contrary, bleed in the Arm, you divert the Blood from the Parts that are oppress'd therein; you facilitate its Course, you clear the Ways through which it is to pass; and you give the Conduits the Suppleness they want to issue forth the Blood they convey; for the Bleeding at the Foot will never provoke the Terms, unless they be actually flowing, or by a sudden Cold, or seizing Fright, have their Course interrupted. This way of Reasoning *Dr. Freind* can no

wise relish ; it has something in it that is
 strange and shocking to him. Here it is
 suppos'd, says he, that the Blood is so swell'd
 and rarified, that it might easily flow thro'
 the Vessels, if, when 'tis carried downwards,
 the Plenitude it contracts did not form an
 Obstacle to its Discharge ; that the Vessels,
 the more they are gorg'd with Blood, are
 less in a Condition to yield to the Torrent.
 He rejects this ; finds it contrary to Medi-
 cal Philosophy, and even inconsistent with
 common Sense. But is this Reproach well
 grounded ? and have not we a Right to
 make it recoil upon its Author ? *Etmuller*
 is here accus'd not to have common Sense.
 This Accusation, if it be found unjust, will
 it not rebound upon Dr. *Freind* ? Shall we
 have more Respect for him than he has for
 one of the greatest Masters in Physick ? The
English Physician is so pre-possess'd with
 his own Opinion, and so glew'd, as it were,
 to his own System, that he considers no
 other's ; and takes no Pains to enter into
 the Sentiments of the *German* Physician.
 There is a System which is satisfy'd to make
 the Vessels yield or burst to give way to the
Menses ; according to this Idea, it is natu-
 ral and reasonable, that the more the Ves-
 sels are swell'd and distended by the Blood,
 the more fit they are to yield and to be
 broken : But have we not observ'd, that
 Dr. *Freind* himself falls into the same Ab-
 surdity, which he reprimands in *Etmuller*

hav

have we not observ'd a Case where the Distention of the Vessels being pre-suppos'd, and the Abundance of the Blood that dilates them, he still owns a Suppression? We need but call to Mind what has been lately said upon the Slowness of the Blood. By and by we shall see another parallel Case; so that it is important not to let slip, without Notice, what he advances here. At the same Time this System, which we have just now seen, is not the only one; there is another which does not make the Vessels yield, but, on the contrary, makes them act to provoke the Terms. Now, the Fluxes, on this Hypothesis, not depending on the Vessels that yield, but which make the Blood yield to them; not on their conquer'd Forces, but on their superior Action, on their victorious Power, on their sovereign Empire, on their triumphant Oscillation: 'Tis not, on this System, a thing contrary to common Sense, that the Vessels should be so much less fit to procure the Courses, the more they are dilated and swell'd to Excess; because then, tho' much more easy to be overcome, they are less qualified to act and free themselves; which is what is requir'd in this other System. Our Author will have it, that, if the Bleeding in the Foot provokes the Terms that flow, or that are stopp'd in Flowing, it would also recal them, when suppress'd, from their Flux, tho' of a long Standing. This Consequence is not just;

but why, says he, in the first Case, does this Bleeding augment the Force of the Blood, in hurrying it downwards, and does not augment it in the second Case, acting still in the same Manner? The Question is not here about the Force of the Blood: *Etmuller* is not obliged to speak in Consequence to the Principles of Dr. *Freind*; and Dr. *Freind* is but ill warranted to measure every thing by his own Ideas, and suit every thing to his own Hypothesis. To do this, he first must prove, that the only way to be taken is that which he has taken; and that his is the only System that can rationally be follow'd: He ought first to have made it impregnable, and not have left such a Hold to be laid on't as he has done; since this System, according to what appears in our Remarks, is by so many Ways so successfully shaken.

The Bleeding in the Foot excites the Terms that flow, and that are interrupted in flowing; because then the sole Business is to assist the Blood's Determination towards the Uterine Region; the Blood flows; this is a Sign that it is clear'd, refin'd, well-condition'd; and that the Vessels are not embarras'd; now, the Passages, the Issues, the Conduits being free, and clear'd, the new Blood which the Bleeding in the Foot determines that way, will easily pass, and without Pain, proceed to its Exit. The Blood that just now flow'd, ceases, and flows

no more. In this Case, it is only repell'd ; only its Determination happens to be alter'd by some unlucky Accident ; and you must recal the Blood to its Determination downwards. Here you have nothing to conquer but the Repercussion wrought, either, for Example, by a stopping Cold, or by a seizing Fright ; and this the Bleeding in the Foot does ; it determines the Blood towards the *Matrix*, and restores it to its former Tendency : But a Suppression of a long standing, being caus'd by the Congestion and Stoppage of the Blood in the Uterine Capillaries, our Business is not here about its Tendency towards the Vessels, but about its Discharge and Enlargement from the Vessels themselves : The Matter is not now to attract the Blood downwards, but to clear away that which is already there, and which is there but in too great a Quantity ; since it is this very Quantity itself that renders it there so very clogging and troublesome. Dr. *Freind* agrees, that the Bleeding in the Arm practis'd in such a Case, withdrawing a Portion of the Blood towards the superior Parts, the Conduits of the Womb are thereby in Truth reliev'd ; but, says he, the Diminution of the *Plethora* abating the Impetuosity of the Blood, the Vessels are not so dispos'd to break, because the Vessels are less extended. This is another irregular Reason, which supposes we can't take from the Abundance of the Liquid,

quid, without abating aught of its Velocity; which is directly contrary to what the Author owns himself, a little before, in these Words: *Igitur triduo antè, consultum periodi tempus, secatur vena, ut tum præcipue novus sanguini accrescat impetus, cum augmenti summam attigerit Plethora.* What Strefs can we lay, after this, upon the Decisions of Dr. *Freind*? What can we reckon upon? To what Principle shall we adhere? The Sentiment of *Etmuller* is confirm'd by a famous Observation of *Riverius* upon a Woman whose Terms always stopp'd as often as she was blooded in the Foot, and very largely flow'd when she was blooded in the Arm: This Phænomenon agrees but little with the ordinary Ideas of Physicians. The Doctors of *Montpellier* have explain'd it by a Mechanism very well contriv'd, but incompatible with the System of our Author; whom one may defy, with all his Efforts and vast Capacity, to account for this Fact, related in the Second History of the First Century of *Riverius's* Observations. This Woman, say the Doctors, being Plethorick, and attack'd with a Suppression caus'd by the prodigious Mass of the Blood which dilated the Vessels of the *Matrix* to such a Degree, that they could not sufficiently use their contracting Power; when, by bleeding in the Foot, the Blood was determin'd towards those Parts which were already over-charg'd therewith, the Clog

was augmented; and Occasion given to an
 obstinate Suppression; but when, by bleed-
 ing in the Arm, the Blood was invited to
 the superior Parts, the Vessels of the *Uterus*
 were disengag'd: Now, their Plenitude and
 Distention being diminished, they could con-
 tract and play with more Ease, and so pro-
 cure the natural and periodical Evacuation,
 which is made thro' Issues of the *Matrix*.
 Dr. *Freind* intrenches himself in this Sub-
 erfuge, which is in a Distinction he makes
 betwixt a *Plethora*, which he calls solita-
 ry, and that which is join'd with a *Lentor*;
 and he says, 'tis only in this that the Pre-
 caution of *Lindanus*, noted in *Etmuller*,
 takes Place. He adds, that the Woman,
 of whom *Riverius* speaks, was troubled
 with this Sort of *Plethora*; and upon this
 bottom he approves the Indication which
 the *Montpellier* Doctors have taken, and
 subscribes to their Practice. The Author
 then grows a little more mild towards
Lindanus, and declares, that what is rela-
 ted by *Etmuller* takes Place in one Case;
 he is therefore in the wrong, to cry out so
 loud against it, and pronounce, without
 Ground, that there is not common Sense in
 the Reasoning of that Author. Here he
 should make Reparation to his Honour:
 he agrees, that, in Suppressions, one bleeds
 first in the Arm, and then in the Foot; he
 assigns for a Reason of this, that the bleed-
 ing in the Arm augments the Velocity of
 the

the Blood, and bleeding in the Foot augments the *Plethora*, in regard to the uterine Vessels. But is this what he said at first? Might not one prove by his own Principles, that the Consent he gives to this Practice is not very rational? Let us call to Mind what Dr. *Freind* hath said; does not common Sense require, that the more the Vessels are swell'd, the more they are suppos'd to yield, crack and break? *Ne communis quidem sensus ferret, vasa quò magis sanguine distenta sint, eo minùs esse ad cedendum facilia.* Now, in the Plethorick Woman we are talking of, when she is blooded in the Foot, this augments the Swelling of the uterine Conduits, which are thereby more disposed to break, and give way; yet the Doctors of *Montpellier* caused the Woman to be blooded in the Arm, and, by this Bleeding, one will say with Dr. *Freind*, it is true, that the uterine Passages are clear'd of their Stoppage and Oppression; but as the Impetuosity of the Blood languishes by the Diminution of the *Plethora*, the Vessels are render'd less liable to break, because they are then less extended. *Scētā Brachii venā, cum nonnihil sursum revellitur, liberantur quidem ab oppressione via uterina, sed impetu ob Plethoram imminutam languente, haud ita facile dissiliunt vasa, quia minùs sunt distenta.* The Slowness and the Viscidity of the Blood is according to our Author, a Reason not to bleed

bleed; and Bleeding does no good in Suppressions, save when the Particles of the Blood are enough disengaged, and not very tenacious; because then they easily shift their Place, and are perswaded to what he calls *Dimotion*. Now, he agrees, that the Blood of the Woman we talk of was viscid, slow, and tenacious; how then, on his Principles, can he allow her to be blooded? One has only to compare what he has advanced with the Explications he now gives, on Occasion of this Woman, to see that all won't agree, and that the System which is offered to us, as incontestable, and as a first Principle avow'd by every body, is not well supported. I should have a great many more Remarks to make upon it, but I confine myself to this precise Reflection, which may furnish many more: If the Flowing of the *Menses* could be wrought by the Rupture of the Vessels, it would be more particularly done when the Vessels were the most frangible; now, the Vessels are most frail, when they are the most extended; but they are the most extended, when they are the most gorg'd with Blood; and they are more gorg'd with Blood, by bleeding in the Foot, than by bleeding in the Arm; therefore, bleeding in the Foot stuffs them more with blood, stretches them more, and makes them more frangible. Then, as bleeding in the Foot renders the Uterine Vessels more frail, and more ready to be broken,

it should, in the Woman we are speaking of, provoke the monthly Flux. If this Flux is wrought by the Breaking of the vascular Tunicks, the Blood is excessively abundant, it has all that it can want to prevail; the Vessels on their Part are dilated and stretch'd to the last Degree; so here is all that's wanting to conquer them; then, what hinders them from being broken? and since the bleeding of the Foot, in stretching them, disposes them more than ever to burst, is it not evident, that it favours, and ought even necessarily to produce the Flux, if this must be explain'd by the Rupture of the Vessels? I omit several Irregularities, to finish this Discussion with two Words of Observation upon some Histories of Fact, related by our Author, concerning Suppression. The first History is of a Girl Eighteen Years old yet without her Terms, who complain'd of a great Pain in her Loins, Knees, and Ancles; she had Difficulty in breathing, Squeamishness, and Gripes; her Heart, upon the least Exercise, panted; her Complexion was lively and florid; her Pulse weak and slow; she was very much afflicted with these Symptoms for about Six Months: Dr. *Freind* did not find here any Indication for Bleeding, he only propos'd to break and refine by Attenuants, the viscous Texture of the Blood.

But is it not a wise Precaution, when the Vessels are too much stretch'd, and the Blood

of, Blood too thick, fizy and stiff, to unbend the
 Vessels; and to diminish the Volume of the
 Blood, in order to facilitate the Action of
 incisive Remedies, that they may lay more
 Hold upon the massive Humours? Is it not
 risking a great deal to undertake to rarify
 a Blood which we don't diminish in the
 Vessels, whose Sides we cannot further
 stretch, and all whose Space the Blood, by
 its Thickness, now takes up? Where then
 will be Space for it in its Rarefaction? But
 this is the Means, one will say, to make
 the Uterine Capillaries crack; but this is
 also the Means to burst other Vessels too:
 This Practice makes us justly fear the Rup-
 ture of other important Vessels, and of con-
 sequence terrible Hemorrhages. Besides, it
 is enough, if we consult the Motions of Phy-
 sick, to persuade us, that a Mass of Juices,
 thick, gross, glewy and compact, resists too
 much the Action of Attenuants, and the
 Virtue of Incisives, for them to be able to
 lay hold of, penetrate, and thrust themselves
 thereinto: They can do no more in this
 Case, but shove, struggle, and rummage in
 this Mass, instead of insinuating nicely into
 the Pores, wriggling subtilly, and without
 Noise, into the Interior of the Substance, so
 to separate with as much Efficacy, as little
 Disturbance, the Particles thereof. Bleeding,
 which is preparative to the Use of *Opium*,
 and which the most secures us in it, as has
 been clearly proved in the judicious Re-

lections that have been made thereupon; should, for the same Reasons, be a Preparative for Emmenagogues, and secure their Success.

Bleeding then might have been apply'd in curing the sick Person in Question; every thing seem'd to indicate this, and, above all, the Difficulty of breathing, the Palpitation of the Heart, and the ruddy Colour of the Face; but the Obstruction which appear'd in the Region of the *Matrix*, whither the Blood had flow'd with too much Precipitation, and where it had contracted a powerful and well-knit Body, requir'd the Bleeding to be not in the Foot, but in the Arm; therefore it seems, that had the Patient been bled in the Arm, one might have thereby freed the lower Parts, that were gorg'd, and, as it were, suffocated; and, by un-corking them, one might have engag'd them to yield readily to the desired Evacuation. Dr. *Freind*, however, declares, that he did not think fit to employ this Remedy, by reason of the Weakness of the Girl, and because he apprehended, by this means, he might diminish, instead of augmenting the Blood: But these are Conjectures too weak and light to divert from the Use of a Remedy indicated, in other respects, by such pressing Motives; the Weakness, above all, is not in itself, as we have already shewn, a good Reason to omit Bleeding. Our Author, in his third Observation, gives us the

History

History of a Washer-woman, of a sanguine Complexion, about Twenty Four Years old, who, in washing with her Terms upon her, was seiz'd with a Fit of Coldness; she was also washing her Legs with cold Water; wherefore, the Flux having been here rebell'd by the Cold, her Terms disappeared for a Year, without any great apparent Consequence. Dr. *Freind* accounts, by her great Fatigue and Labours, for the little Prejudice this seem'd to do her Health: But, about the End of the Year, she felt a very considerable Change; such as, a great Heaviness and Weakness, the Action of the Stomach infeeble'd, the Function disorder'd, Pain in almost all her Limbs, a Cough, a Difficulty of Breathing, a Paleness, a Swelling of her Legs, where so hard a Tumor grew, that it was impossible, by any Plaster or Cataplasm, to soften it, or to bring it to Suppuration; and her Pulse became feeble, and languishing. The Patient would have prevented all these Accidents, if, at the Time of her Flux's Repercussion, she had got herself blooded in the Foot, according to the Remark of *Lindanus*, and the Reflections of *Etmuller*. Dr. *Freind*, who, in all Likelihood, did not see the Washer-woman, but in the Time of the inveterate Suppression, took from the Tumor an Indication to make her be bled in the Arm; which he owns did no great good; but bleeding in the Foot, tho' a long time after the

the Interruption of the Flux, wou'd perhaps have had better Success, in regard to the Source of the Suppression which seems to require this Bleeding, and which we the more readily believe, as the Blood shews no Appearance of gathering, slackening and Congestion, in the Uterine Conduits; and if it don't flow that way, this seems to be not so much through any Clog or Impediment that might be there contracted, as for want of its being determined towards those Parts. And what justifies this Thought of mine is, the Remark it self of Dr. *Freind* who explains how the Suppression might have been so long a Time inoffensive, by the great Exercise of the Washer-woman which did not allow much Time for the Blood to sojourn, stagnate, corrupt, and stick in the Uterine Region, so tost and jumbled as it was, and by Consequence render'd more transpirable by the Woman's Agitation. There seems then nothing here wanting to the Blood, but a proper Determination towards the *Matrix*, which is favour'd and promoted by bleeding in the Foot and that ought here to have been done according to the Notions I offer; which, after all, are but Conjectures I venture to make and submit, with all my Heart, to the Judgment of Physicians, among whom Dr. *Freind* shines in so distinguish'd a Rank. This able Physician, who judg'd it not convenient at first to use this Bleeding, did u

it towards the End of the Distemper, after Purgatives and Emmenagogues, to give the finishing Stroke to the Cure, and so compleat his Work. Four or Five Days after this Bleeding, her Terms appear'd, the Patient recovered her rosy Colour, and all the Accidents vanished. Now we have nothing left to do, but to apply to the Emmenagogues the Inconvenience that Dr. *Freind* finds in bleeding, in Relation to the Suppressions: This will pin up the Basket, and shew that his Principles clash, and that his System, tho' display'd with all the Clearness, and prov'd with all the Reasons that it is susceptible of, don't appear well supported. When, says he, after *Bellini*, * a ready Removal of the Blood follows after bleeding, or when the Blood is so rarified, that its Particles are dis-united, and easily divided one from another, this Liquor acquires a Velocity that fortifies its Power, because the animal Spirits, enlarg'd and free, flow to the Heart in a chearful Abundance, and the Blood, broken and subtiliz'd, makes less Resistance against the Action of the Vessels: But, if no Removal follows, the Quantity of the Blood being abated, the Velocity is so likewise; and so the Blood loses of its Force. It were to be wish'd, insinuates Dr. *Freind*, that *Bellini* had establish'd a constant Token, a certain Sign of this Constitution of the Blood, that

* Cap. 11.

suffers

suffers a Removal by bleeding, and of that other which does not suffer any thereby; because, for want of knowing this State and Disposition of the Blood, the Physician cannot be sure in what manner Bleeding will change it, and modify its Motion for the better or the worse. By reason of this Uncertainty and doubtful Success of Bleeding, we must abstain therefrom, unless the Violence of Accidents inforce it: For if, in letting Blood, we render it more flow and compact, not only fewer animal Spirits will arise from it, and so the Stroke of the Beating of the Heart will be the more weak, but the Obstruction that afflicts the Capillaries, and holds 'em Captives, will gather new Force. Therefore, in the Beginning of the Suppression, Bleeding does not seem to be indicated, unless one plainly sees the Means to break infallibly the compact Texture of the Blood, and to redouble its Force by renewing its Velocity; let us examine, according to his Model, the Action of the Emmenagogues, that makes a Part of the Alteratives, and then consider after * *Dr. Freind*, if the Action is more certain, and the Success more assured. How says he, can the same Force surmount such different Resistances? How can a Remedy act in so uniform a manner, when the Subjects upon which it operates are so unlike? There is nothing more ridiculous than to

* Cap. 14,

expect from a Medicament a constant Action, a faithful Energy, an infallible and permanent Virtue, since it is not strange or repugnant for one and the same Remedy to produce contrary Effects. Suppose, for Example, the Disposition of the Blood be such, that the greater Part thereof is extremely vitiated, and the *Lentor* too obstinate to be conquer'd by the Force of Attenuants; in this Case, if we apply a Resolutive or Subtilifant, it has no Effect but upon the thinner Part of the Blood, which it melts and refines, till it makes it pass in abundance thro' the Strainers, that is, thro' the Glands and the Filtres of Secretion; so, the most subtle, or finest Parts of the Blood being discharged by the Force of the Medicine, the Remainder of the Mass will thereby be but the more compact, thick, and close. Do but observe, how the Diaphoreticks, those powerful Attenuants, do sometimes even augment the *Lentor*, and the Grossness of the Humours, as we see by Experience. *Quomodo enim eadem vis diversa longè momenta queat pervincere? Quomodo similis semper esse posset agentis energia, cum ita dissimilis prorsus sit corporis in quod agitatur Natura? Constantem hanc medicamentis sperare efficaciam, ita ridiculum est, ut nihil mirum sit, si etiam ab eodem medicamento educi possit effectus contrarius: Concipiamus enim eam esse sanguinis crasin, ut pars ejus longè maxima insigniter*

*signiter lentescat, cohæret æquè in eâ momentum validius sit quam quæ ab attenuantium viribus resolvi queat. In hoc casu, si adhibeatur medicamentum resolvens, eam quiddam sanguinis partem, quæ minus lentescit, ita fundit & attenuat, ut per glandulas excretorias uberius extrudatur: ita medicamento vi, eliminatis particulis tenuioribus, crassior erit reliqui sanguinis compages: ad hunc modum, uti & docet experientia, lentorem aliquando augent Diaphoretica. Yet must we not exclude Resolutives, because of their doubtful Success, and uncertain Issue: Dr. Freind makes often use of them, without Hesitation, at the same time that he should either abstain from them, or not use them, but with such Precautions as himself prescribes in bleeding: We must beforehand be assured of the State of the Blood, know, in that Point, what we have to go upon, have Tokens that denote the Degree of *Lentor* or Viscidity requisite to be carried off by the Emmenagogues. As we are admonished, that we must have some of these Signs that mark to us the Degree of Thickness capable of being corrected by the bleeding, for want of which the first Reliefs are no more practicable than the last, they are both alike uncertain: Then, upon what Account is the one preferr'd to the other? This should have been clear'd up. Dr. Freind should have instructed us in this, and in this, as well as many other things*

but for the Death of the illustrious Author, we had Reason to hope from him further Lights. He flatters himself, that this fine Phænomenon about the Courses can no way be explain'd, but by his Principles; yet I have ventured upon other Principles, and the System of the red Part of the Blood being engag'd in the Canals of its white Part, the prevailing Opinion of Dr. *Helvetius*; and which he has so much illustrated on the Subject of the Small Pox, of which he has so learnedly and usefully treated: A System! which gives Light into the Explication of the Hemorrhages and Inflammations, and which so perfectly agrees with the animal OEconomy, and natural Mechanism. This System, I say, yields in nothing to that which Dr. *Freind* has given us, not only as the best, but as the only one. From the Principles I have already laid down, every one may make his Remarks upon the other Parts of the Author's Book, which I have not touch'd; and 'tis likely, that with how much the more Attention and Care one shall apply to this, the more the Weakness of his Reasoning will appear, and the Uncertainty of his Hypothesis. From the Reflections that have been hitherto made, it may be gather'd, that 'tis, by no means, an indifferent Matter in Practice, to adopt indifferently, the System of the Rupture of the Vessels, or that of the Intrusion of the Blood into the lymphatick Canals: It is of

the highest Consequence, to chuse either the one or the other, to list on one Side or the other, and to appear more than ordinarily engaged or concern'd therein. If the Dispute here was only about some insipid, barren Point of Speculation, amusing perhaps to the Curious, but altogether useless, and without Influence on Practice, those who regard things only as they are useful, might perhaps slumber over it: But as our Business here is about a capital Point, which affects and concerns Practice to the highest Degree; since in the two Hypotheses the Manner of Cure is quite different; this ought to awake the Attention of all Practitioners, inspire them with an extraordinary Relish for the present Subject, and rouse them totally out of their Indifference. Some will perhaps attack the fundamental Principle of these Reflections, which is, that the Blood owes its Velocity to the Impulse, and systaltick Virtue of the Solids; they will tell me, that the Vessels may be enormously distended and stretch'd to Excess, and still the Fluid which they contain may move on with Impetuosity, by virtue of the Medicaments that act upon it, that break its Texture, bruise its Mass, correct its Viscidity, quicken its *Lentor*, and separate its Parts; whence may result an Increase of its Force, a Renewal of its Velocity, and all this independent of the Oscillation of the Vessels, which still remain stretch'd, constrained,

strain'd, and, as it were, captive. This has been proved by a Number of Experiments: A Mixture has been made of the Blood newly drawn from the Artery of a Dog, with several Druggs, which Mixture has given Occasion to various Phænomena. The Blood mixt with the Spirit of Salt Armoniac, was of a beautiful Red, and fine Consistence, mixt with a Decoction of Savin, or Horehound, it appeared of a deeper Red, and of a finer Substance; with *Sydenham's* Liquid Laudanum, it was of a brighter Colour, than with the Decoction of Savin, tho' not of a much finer Substance; with the Distilled Water of Rue, or Wormwood, it continued very fluid from the First till the Thirteenth of *February*. A Mixture was also made of the Serum of Human Blood with the Tincture of Aloes drawn with Mint Water, with a Decoction of Savin, a Decoction of Gentian, Spirit of Tartar, of Saffron, of Turpentine, of Guaiacum, and of Hartshorn; the Oil of Turpentine, of Guaiacum, of Lavender, and of Cloves: By means of these Druggs successively applied, the Serum held fluid many Days, but nothing render'd it near so fluid and so fine, as the Decoction of the Jesuit's Bark. We have been also assured of the Working of Medicines upon the Blood, by Injections and Intromissions into the Body of a living Animal: We need but consult thereupon the 4. Chap. of the *Emmenology* of Dr. *Freind*, which

which proves by unquestionable Experiments, that the Blood is altered, changed, modified, attenuated, broken, refin'd, set in Motion, and render'd fluid, by the Power of Emmenagogues: Therefore the Fluid having another Mover than the Oscillation of the Solid, may be moved rapidly, impetuously, and precipitately, even when this Oscillation is languishing, feeble, and impotent: Therefore the Blood may have the Advantage of Mass, Velocity, Pressure and Percussion: Therefore, the Vessels being enormously dilated, weakened, and constrained, may be forc'd by the Action of the Blood, an Action which it has independent of the Vessels, and from which they can draw no Advantage; a Stroke consequently which it can give them, without being accused of Ingratitude, and without incurring the odious Reproach of turning its Power against those who gave it. This Stroke the Vessels will be unable to resist, and be forc'd to yield to it, broken, disarm'd, and overwhelm'd, not by the Power which they (the Vessels) lend to the Blood, since they have none to lend, but by that which the Blood has borrowed elsewhere. This is what may be objected against me, and certainly I have given the Objection all its Weight, and wish heartily it might screen Dr. *Freind* from any Attack. I agree, that Medicines act upon the Humours, and inspire them with divers Qualities; but it is proper

to observe first, that this is not always immediately, nor without the Participation of the Solids. The first Operation of Remedies inwardly taken is upon the Stomach, and thence spreads thro' the whole *Genus Nervosum*, whereof this *Viscus* is a Part; and consequently it is not strange, that the Stomach should transmit the Modifications and the Impressions which it receives. The quickest Operation of Medicines, and the briskest Revolutions they cause, are due to the sudden Emotion which the Solids acquire, when they are affected by the Medicines. Smoke raises the Vapours, and cures them; the Sprinkling of cold Water, the bare Taste of good Wine, recovers from a swoon, recalls the straying Soul, and restores the lost Faculties. Remedies oftentimes make no Change in the Blood, but by means of the Solids, which they first change, and whose Tone they alter, so that they become more elastick, or more moderate, according to the Action of the Remedies, that work and drive on the Fluids with more or less Heat; whence ensues in the Blood more or less Refinement and Celerity. Daily Experience proves the great Share the Solids have both in the Disease and in the Cure; they are the Lords of the Animal OEconomy, the Principle of every Good, and of every Evil there.

But now, after those general undetermined Ideas, which it is good to advance, let

let us descend to something more particular, which more nearly regards the Difficulty we have been forming. Upon this I have two Reflections to make; the first, that the Virtue of Medicines has nothing at all to do with a State of Health. In the Case of an ordinary and natural Flowing, the Blood then makes its own Way through the Turnicks of the Vessels, yet is not put in Motion, nor push'd, nor made fluent, refin'd and fluid, by the Power of the Medicines; therefore, if it has Celerity, it owes this to the Oscillation of the Solids, which, with redoubled Strokes of Systole, impart to it its present Motion, and accelerate its Flowing: For, I believe, it will be granted, without Difficulty, that the Blood which is not broken, agitated, and attenuated, by Remedies, can be no otherwise so, but by the Means of the Vessels; so that, if it is in Action, it must owe this Action solely to the Spring and Vibration of the Solids; what other Cause, on the present Hypothesis, can move the Blood? what other Mover, what other Principle can give any other way Agitation to this Fluid? Does it move itself? Has it in its own Stock wherewithal to put itself in Play? Does it draw its Power from its own Choice? I appeal to Dr. *Freind* himself, who undermines the Foundation of the Blood's intestine Power, and who, from the Beginning of his Work, gives a mortal Blow to the Fermentation already

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ments, even the Instruments of Fermentation, are taken from her, poor Thing! she has not allow'd her a Space ample enough to make her Pushes and her Sallies in; pent in Canals too streight, in Places too close for her; where she undergoes the Cruelty of being oppress'd and stifled, destitute, in these inextricable Difficulties, of all Relief, and unable to defend herself; all her Charms are fled from her; and her armed Adversaries have laid violent Hands on all that belongs to her, depriving her of all that she can desire, or that can give her any Advantage. O ye that have run thro' all the different Hypotheses! consider if there is one of 'em all so cruelly treated, and that languishes in a Situation so very deplorable as hers. What! says one, the Doctrine of the Ferments is no more in Use! and the *Literati* have his'd it off the Stage; sad Case! Is this the Fermentation that a while ago made such a Figure! Can you know her again by this Picture, you that used so to idolize her! you that still are so fond of her, is it possible, Sirs, that this can be the Object of your Delight and tenderest Addresses! This Offal, this May-game, this Bitch with a Bottle at her Tail, can this be your Favourite Mistress! Can you own this your Idol in so disguis'd a Metamorphosis. Fermentation is then in Disgrace with Dr. *Freind*; and according to him, with all the best Authors too. Then he can't admit

in the Blood a Virtue proper to make it circulate ; it is therefore allow'd to believe, that the Motion, the Swiftnefs of the Blood, in the natural State of Health, is the Effect of the Action of the Vessels that press, push, and hurry it ; and the Acknowledgment of Dr. *Freind*, who rejects this Fermentation, leads to this Thought, conducts to this Consequence. This just comes to what we have been demonstrating, that the Blood cannot make an ill Use of the Celerity which it has from the Vessels, thereby to break these ; whence it follows, either that the Terms can never naturally flow, without the Aid of Medicines ; or that the Velocity of the Blood is not necessary to the Flux, but is even contrary to it. If the Fluid naturally holds its Celerity from the Solid, which hastens its Way ; and if, by Virtue of this Celerity, the Fluid cannot break the Solid, as hath been prov'd ; then, of necessity, Nature alone cannot push the Terms, unless it be the Abundance, and not the Velocity of the Blood that makes 'em flow. Yet Dr. *Freind* makes the principal Mover of the Flux to consist in the Swiftnefs of the Blood ; and the principal Hinderance, and ordinary Cause of the Suppression, to consist in its Slowness. So that it does not seem possible, on the Principles of this Author, to explain how the Flowing of the Terms is procur'd by Nature alone. The second Reflection I have to make is, That

the Fluids attenuated, bruised, and broken; by the Force of Emmenagogues, do not so strongly oppose the Action of the Solids; the Blood render'd supple, flowing, and docile, by these Medicaments, suffers itself to be led, subdued, and jerk'd along by the Vessels, which, finding no more, as before, an invincible Obstacle in the gross and compact Mass that the Remedies have reduc'd and subtiliz'd, recover their Ease, resume their Vigour, and set themselves at Liberty. Whence we see, that the Emmenagogues at the same Time that they set the Blood at large, set also the Vessels at their Ease too. Now, being at their Ease, 'tis evident, that they are not so liable to be broken; yet the Blood, upon which the Remedies act, might be so abundant, that it could not swell and rarify, without forcing the Canals to burst: In this Case, if the Medicines melt and rarify it, it seems that they will infallibly occasion the breaking of the vascular Tunicks, which, as they cannot stretch any further, must needs crack. But we have observ'd, that the Blood, arriv'd to such a Pitch of Abundance, to such a Degree of Grossness, is not fit to be wrought upon by Attenuants, because these can take no Hold of it: We have observ'd, in this Circumstance, the Usefulness, and even the Necessity of Bleeding, to set the Attenuants at Work; therefore, in an excessive *Pléthora*, in an extream Viscidity, Emmenagogues

gogues, being equally as impotent as the
 Vessels, are as little able to do any thing
 as these are. That which hinders these
 from strongly contracting, hinders also those
 from fastening upon the thicken'd Humours;
 whence it seems to follow, that the Blood
 cannot apply even the Velocity which it
 receives from the Emmenagogues to break
 the Vessels; because the Remedies cannot
 animate it so much as it shou'd be, but with
 the Assistance of the elastick Vessels. They
 do not indeed import Fluidity; but this is
 not progressive Motion, the Motion of Cir-
 culation, which is not to be obtain'd but by
 the systaltick Virtue of the Vessels. The
 Blood attenuated by Emmenagogues, may
 well become Fluid; but it cannot acquire
 Velocity, save only by being push'd, beaten,
 and jerk'd along. According to Dr. *Freind*,
 the Stroke of the Blood is that which
 makes its greatest Strength: Now, the
 Stroke, that is to say, the Briskness of the
 Shock, the Violence of the Percussion, does
 not precisely come from the Fluidity; but,
 because the Fluid is strongly struck upon by
 the Solid, which Blows it again retaliates,
 and, in its Turn, re-buffets the Solid; there-
 fore, if the Vessels were flat and unactive, in
 Torture, and in Captivity, and the Fluids
 left to the sole Action of the Attenuants,
 these Fluids would not receive Force enough
 wherewith to strike upon the Solids; they
 would acquire but an indolent Fluidity,
 only

only a Dis-union of their Parts, a Dissolution of their Mass, incapable of any great Effects; they could not contract that Impetuosity necessary to give Strength to their Blow; Briskness to their Shock, Power and Force to their Percussion. Our Author himself deduces the Velocity of the Blood from the vehement Pulsation of the Heart, and of the Arteries; a Pulsation produc'd, as he says, by the Affluence of the animal Spirits: Whereas, these animal Spirits themselves can be nothing but the Work and Effect of the Spring of those Parts that agitate and push them to the Degree of Fineness which they have. Therefore the Velocity of the Blood is the Effect of the Expulsion of the Vessels; wherefore, it cannot make Use thereof to break them: Therefore, if Emmenagogues excite the Flux of the *Menses*, this cannot be by the Velocity which they impart to the Blood; but rather by the Swelling, the Rarefaction, the disorderly Turgescence which they produce therein; by the Means of which the vascular Tunicks give way, not to the Force of the Percussion, but to the Excess of their own Dilation. Another Difficulty might be started against me; the Vessels, in the Effort they make to drive on with Swift-ness and Percipitation the Blood subjected to their Power, may they not break themselves? Are they not even more liable to be broken, being active than unactive; by

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Exercise, than Indolence; by Fatigue, than Repose? Are not they who labour hardest, most expos'd to the Misfortune of bursting Veins and Arteries? Have not we seen Vessels broken by the Shocks of a violent Cough, and the cruellest Hemorrhages produc'd by the Heat of a burning Summer? It is not therefore strange, that the uterine Vessels, tho' vigorous enough to animate the Blood, shou'd yield to the Blow of which themselves are the Cause; and their Vigour, far from fortifying and defending them against their Bursting, only renders them more proper, more fit and dispos'd for it. I own the Vessels may be broken by their own Pains and Fatigue; but it must be also confess'd, that it is by Accident when this Misfortune happens, and that these are Cases for which none undertakes to give invariable Rules, and Geometrical Demonstrations, such as *Dr. Freind* has attempted to give us; there is too much Uncertainty in the Rupture of the Vessels; and 'tis too fortuitous a Case, to draw and deduce thence an Effect so sure, so constant, so natural, so regular, as the Phænomenon of the Monthly Courses. Besides, the Rupture of the Vessels is not a thing so common as one imagines; bleeding at the Nose, spitting of Blood, Accidents very frequent and vulgarly attributed to Ruptures, don't so much denote broken Vessels, but rather such as meet discharging Canals, that terminate in the Sanguines; and do not so much declare the Extravasation of the Blood,

as

as its Passage into the Emunctories. Why, indeed, so few Ruptures in the slenderest, tenderest Fibres within the Body, which are remote from Places of Discharge, whilst we discover so many and so often just by the Issues, near the Excretories, and in the Blood-Vessels, most within the Reach of the Outlets, most known and best remark'd? This Observation justly intimates that which is attributed to the Rupture of the Canals, is usually but the Effect of the Intrusion of the Blood into the Lymphaticks. These seem to me the strongest Objections that can be made against me; and the proper Answers to be made to them: Dr. *Freind's* System, therefore, cannot be defended, and still lies under the same Difficulties.

Yet, after all, can't flatter myself, that I have, with any Solidity, taken up so learned a Man as Dr. *Freind*: What I have hitherto advanced I look upon it rather as a Web of Objections to be answer'd, than as a Criticism to be redoubted: If I have not attack'd my Author with Advantage, I shall at least have the Glory of having studied him with Application. It is always good to betake ourselves to the best Authors, 'tis pleasant to contemplate their Beauties; and even when we attack them unsuccessfully, yet don't we apply thereto, without reaping an Advantage. But, should my Objections be made with some Foundation, I would not take it amiss to be compared
to

to a rebellious Child, who battles its own Nurse, because, by her succulent and well-condition'd Milk, she has supplied him with the Strength to do it. Foster'd by the Reading of Dr. *Freind*, imbu'd with his Lessons, improv'd by his Knowledge, enlighten'd by his Light, I have made use thereof against himself. I own, I should have had no Success in engaging him, if I had not improv'd by studying him; if I had not gather'd my Knowledge from reading and meditating him; and if, before I made War upon him, I had not learnt my Discipline under him. If we gain a Victory over good Authors, 'tis because themselves supply us with the Means to gain it.

F I N I S.

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